In the Specification:

Page 4, lines 16-17:

It is an object of the present invention to provide a projection lens system and method for shifting or titing of the lens that allows high ~~precession~~ precision.

Page 12, line 16 - page 14, line 16:

As an example, an acutator mechanism for one drive transfer zone based on providing motion by rotation of a motor shaft 116 which is carried through the gears 118 (not shown in Fig. 1) onto the eccentric axle 120 and on to the motion transfer part 122 and therefore changes the rotation into a translational displacement of the projection lens is discussed in more detail with reference to Figs. 1, 2 and 7. The amount of shift is limited, and can be determined according to the specification set for each specific lens holder. Proximity switches, e.g. 4 switches, can be placed on the lens holder plate 104 to turn off the motors 108, 112 when the full amount of shift in a specific direction has been reached. Fig. 2 show the principle of this way of lens plate shifting in more detail. The motion transfer part 122 is in driving contact with the base plate 104 at a drive transfer zone and is fixed on to the eccentric axle 120. This contact between the motion transfer part and the base plate is provided by drive surfaces. In this embodiment the drive surfaces are provided on opening within the base plate 104. When the motor (e.g. 108 or 112 of Fig. 1) is turned on, the rotation of the motor shaft 116 is transferred to the worm gear 118 of a worm drive. By rotating the worm gear 118, the large gearwheel 124 is made to rotate as well as the axle 120 which is mounted eccentrically on the gearwheel 124 and will follow the rotation of gearwheel 124. The eccentmic axle 120 is preferably journalled in the motion transfer part 122, i.e. for free rotation. The motion transfer part 122 is positioned between two fixed guide parts 126, so that this part 122 cannot rotate itself. The motion transfer part 122 is free to move in a vertical direction in an opening of the base plate 104

and transfers motion to the lens holder base plate 104 in the horizontal direction. This displacement is transferred to the base plate 104 which moves horizontally as the gearwheel 124 rotates. The displacement is actuated by force transfer to the drive surfaces on the base plate 104. These drive surfaces may include displaceable flat bearings 128 such as dry slip surfaces, e.g. made of Teflon® or ball bearing races or holders. These flat bearings are preferably placed between the two fixed parts 126, i.e. the parts 126 fixed to the base plate 104, and the motion transferring part 122 on the eccentric axle 120 (see Fig. 7 for a further view of the ball bearing races). These flat bearings 128 can slide or roll along a track 123, e.g. made of four cylindrical pins. For each motion transferring part 122, there are 2 tracks 123. Each track 123 is made of four cylindrical pins, i.e. two pins are inserted in part 123 and two pins are inserted in the motion transferring part 122 itself. The second track lies on the opposite side of the motion transferring part 122. Since the motion transferring part 122 is located on or is in driving contact with the eccentric axle 120, the displacement of this part 122 exerts force onto the balls in the ball holder 128 and results in the sideways movement of the fixed parts 126. The parts 126 are fixed to the ~~leans~~ lens holder base plate 104 and form part of an opening in the base plate 104. This opening is elongate in the direction perpendicular to the direction in which motion is imparted to the base plate 104. This elongated opening serves two purposes – firstly it must be long enough to accommodate the movement caused by the rotation of the eccentric axle 120 and secondly it must have an extra length to accommodate the movement caused by the other drive mechanism when it displaces the base plate 104 by rotation of its own gear wheel 124. For the device shown in Fig. 2, rotation of gearwheel 124 results in a horizontal shift of the lens holder plate 104. For the vertical direction the same actuator mechanism is used rotated through 90°, e.g. with the other drive mechanism 114 to provide a vertical movement. The same actuator mechanism is used for each drive mechanism, the direction of movement being arranged depending on which motor 108, 112 is used. This method of shifting lens 102 provides a high precision shifting possibility which can be performed continuously, i.e. each position within the range can be provided and without inertia problems. The maximum horizontal

and vertical shift that can be obtained with this system, depends on the type of eccentric axle/gearwheel combination and the length of the tracks 123. Typically this combination is chosen so that the center of the projection lens 102 can be shifted horizontally over about 100% of the width of the panel and can be shifted vertically over about 120% of the height of the panel. Pratically, the shift of lenses can be typically shifted over a number of millimeters. The amount of shift thus is calculated and correlated to the dimensions of the display device and especially in correlation to the height and width of the display device. An example of such a display device can be a LCD panel (= liquid crystal display panel). In this case the display panel is a 1.8" UXGA panel, but also other sizes and configurations can be used.